

**We Claim:**

adjusting the message limit field to compensate for the dropped message; and

transmitting the message limit field to the transmitting node.

setting a variable drop count equal to the message sent field less the consumed credits variable;

1            6. The method recited in claim 1, further comprising:

2 transmitting at a predetermined time interval the flow control message header  
3 to the transmitting node, wherein a value contained in the message limit field is  
4 increased.

1 7. The method recited in claim 6, wherein the increase in the message limit  
2 field further comprises:

3 incrementing send counter and the message sent field;  
4 incrementing and available credits variable by a new credits variable, wherein  
5 the available credits variable represents the total number of messages the  
6 transmitting node may send and the new credits variable represents additional  
7 messages that may be transmitted by the transmitting node; and  
8 setting the message limit field equal to the consumed credits variable plus the  
9 available credits variable.

1 8. The method recited in claim 1, further comprising:  
2 determining if a get credit variable is set to true, wherein the get credit variable  
3 represents that additional messages may be sent by the transmitting node to the  
4 receiving node; and  
5 incrementing the available credits variable by the number of additional  
6 messages permitted.

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1           **9.** An apparatus comprising a data storage medium for storing instructions  
2 when executed by a processor results in, comprising:  
3           transmitting a flow control message header to a transmitting node from a  
4 receiving node, wherein the flow control header comprises a message sent field and  
5 a message limit field;  
6           transmitting a message from the transmitting node to the receiving node and  
7 incrementing a send counter;  
8           receiving the message by the receiving node and incrementing a consumed  
9 credits variable;  
10           determining a message was dropped when the message sent field is less than  
11 or equal to the value of the consumed credits variable;  
12           adjusting the message limit field to compensate for the dropped message; and  
13           transmitting the message limit field to the transmitting node.

1           **10.** The apparatus recited in claim 9, wherein the determining a message  
2 was dropped further comprises:  
3           setting a variable drop count equal to the message sent field less the  
4 consumed credits variable;  
5           determining if the variable drop count is less than an available credits variable,  
6 wherein the available credits variable represents the total amount of space allocated  
7 to receive messages from a particular node; and

8 increasing the message limit field value and transmitting the flow control  
9 message header to the transmitting node.

1 11. The apparatus recited in claim 10, further comprising:  
2 setting a new credits variable equal to the available credits variable plus the  
3 new credits variable; and  
4 setting the available credits variable to zero.

1 12. The apparatus recited in claim 11, further comprising:  
2 setting a send limit variable equal to the message limit field; and  
3 executing a threshold module.

1 13. The apparatus recited in claim 12, wherein the threshold module further  
2 comprising:  
3 determining if the available credits variable is less than a credit threshold  
4 variable; and  
5 transmitting the flow control message header to the transmitting node.

1 14. The apparatus recited in claim 9, further comprising:  
2 transmitting at a predetermined time interval the flow control message header  
3 to the transmitting node, wherein a value contained in the message limit field is  
4 increased.

1           15. The apparatus recited in claim 14, wherein the increase in the message  
2 limit field further comprises:  
3           incrementing send counter and the message sent field;  
4           incrementing and available credits variable by a new credits variable, wherein  
5 the available credits variable represents the total number of messages the  
6 transmitting node may send and the new credits variable represents additional  
7 messages that may be transmitted by the transmitting node; and  
8           setting the message limit field equal to the consumed credits variable plus the  
9 available credits variable.

1           16. The apparatus recited in claim 9, further comprising:  
2           determining if a get credit variable is set to true, wherein the get credit variable  
3 represents that additional messages may be sent by the transmitting node to the  
4 receiving node; and  
5           incrementing the available credits variable by the number of additional  
6 messages permitted.

1           17. A system for transmitting and receiving messages in a network,  
2 comprising:  
3           a receive done module to determine that all message transmitted have been  
4 received based upon a flow control header, wherein the flow control header  
5 comprises a message sent field and a message limit field; and

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6 a post send module to update an available credits variable, wherein the  
7 available credits variable indicates the total number of messages a transmitting node  
8 may send to a receiving node.

1 18. The system recited in claim 17, wherein the receive done module  
2 increments a consumed credits variable and compares the consumed credits  
3 variable to the message sent field to determine if a message has been dropped.

1 19. The system recited in claim 18, wherein the receive done module will  
2 add an additional value to the message limit field when it is determined that a  
3 message has been dropped.

1 20. The system recited in claim 19, further comprising:  
2 a threshold check module to determine if the transmitting node has any  
3 available credits remaining and updating the message limit field to include additional  
4 credits when no further credits remaining for the transmitting node.

1 21. The system recited in claim 19, further comprising:  
2 a post receive module to increment a new credit variable and process pending  
3 message requests.

- 1        **22.**    The system recited in claim 19 , further comprising:
- 2            a periodic update module to determine at a predetermined time interval if a
- 3    transmitting node has run out of credits used to transmit messages with.

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